SEQUENCE LISTING

<110> Outtrup, Helle

Nielsen, Bjarne Roenfeldt

Hedegaard, Lisbeth

Andersen, Jens Toenne

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gcc att gcc tta tcc gct ctc agt tta tcc ttt ggc ctg cag gcc agc   96

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                    Ala Ile Ala Leu Ser Ala Leu Ser Leu Ser Phe Gly Leu Gln Ala Ser
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                    gag tta cca caa att cca cca cag cag gtg aac aac acc atg tac cag    144
5                   Glu Leu Pro Gln Ile Pro Pro Gln Gln Val Asn Asn Thr Met Tyr Gln
                                    5                   10                  15


                    gca ttt tat tgg gat gcc tac cct ggc ctt tgg gcc aat tta ccg gcc    192
10                  Ala Phe Tyr Trp Asp Ala Tyr Pro Gly Leu Trp Ala Asn Leu Pro Ala
                                20                  25                  30


                    atg gcg gcc cct ttg gcc gag cgt ggc att acc tcg atg tgg ttg ccg    240
                    Met Ala Ala Pro Leu Ala Glu Arg Gly Ile Thr Ser Met Trp Leu Pro
15                          35                  40                  45


                    ccc gcc gcc aaa ggc atg aat ggt act ttc agt gtc ggt tac gat gta    288
                    Pro Ala Ala Lys Gly Met Asn Gly Thr Phe Ser Val Gly Tyr Asp Val
                        50                  55                  60                  65


20                  tac gat ttc tgg gat ctg ggc gag ttt aac caa aaa ggc acc acc gcc    336
                    Tyr Asp Phe Trp Asp Leu Gly Glu Phe Asn Gln Lys Gly Thr Thr Ala
                                    70                  75                  80


                    acc cgt tac ggt act cgt cag cag ctg caa caa gca ctg agt gct ctg    384
25                  Thr Arg Tyr Gly Thr Arg Gln Gln Leu Gln Gln Ala Leu Ser Ala Leu
                                85                  90                  95


                    gac caa ctg ggt att cag gcc tat ttt gat gtg gtg ttt aac cac cgc    432
                    Asp Gln Leu Gly Ile Gln Ala Tyr Phe Asp Val Val Phe Asn His Arg
30                          100                 105                 110


                    atg ggc gcc gat gca cag gag aat att cct ggc ttt ggc ctg gcc tgg    480
                    Met Gly Ala Asp Ala Gln Glu Asn Ile Pro Gly Phe Gly Leu Ala Trp
                            115                 120                 125


35                  acc gag tat cat ctg caa ggt cgt cag gcg cat tat acc cag caa aac    528
                    Thr Glu Tyr His Leu Gln Gly Arg Gln Ala His Tyr Thr Gln Gln Asn
                    130                 135                 140                 145
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         tgg ggc tac ttg tgg cac gac ttt gac tgg aac tgg acc gcg ttt aat        576
         Trp Gly Tyr Leu Trp His Asp Phe Asp Trp Asn Trp Thr Ala Phe Asn
                     150                 155                 160

5        ggc tcc gac aat cag ctc tac ccc ggc aaa tgg tgg ggc aat acc ttc        624
         Gly Ser Asp Asn Gln Leu Tyr Pro Gly Lys Trp Trp Gly Asn Thr Phe
                     165                 170                 175

         cac ttc cct tat ttg atg ggt gag gat gtc gat tac aac cgc ttt gaa        672
10       His Phe Pro Tyr Leu Met Gly Glu Asp Val Asp Tyr Asn Arg Phe Glu
                     180                 185                 190

         gtg cag cag gaa atg aaa gcc tgg ggc gag tgg atc atc aac agc gtt        720
         Val Gln Gln Glu Met Lys Ala Trp Gly Glu Trp Ile Ile Asn Ser Val
15                   195                 200                 205

         ggc ttt agc ggc ttt cgg atg gat gcc atc gcc cat gtc gat acc gat        768
         Gly Phe Ser Gly Phe Arg Met Asp Ala Ile Ala His Val Asp Thr Asp
         210                 215                 220                 225
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         ttt acc cgt gac tgg atc aat cac gtg cag tgg gcc acc agt gag gat        816
         Phe Thr Arg Asp Trp Ile Asn His Val Gln Trp Ala Thr Ser Glu Asp
                     230                 235                 240

25       gtg ttc ttt gtc gct gaa gcc tgg gtc agt gat atc aac ggc tat ctg        864
         Val Phe Phe Val Ala Glu Ala Trp Val Ser Asp Ile Asn Gly Tyr Leu
                     245                 250                 255

         gat gca gtc aat acg ccg cat ttg cgc gct ttt gat ttc aat ttg cgc        912
30       Asp Ala Val Asn Thr Pro His Leu Arg Ala Phe Asp Phe Asn Leu Arg
                     260                 265                 270

         gaa gac ttc gtt gct tta agc agc ggt agc aaa gac atg cgt tgg tgg        960
         Glu Asp Phe Val Ala Leu Ser Ser Gly Ser Lys Asp Met Arg Trp Trp
35                   275                 280                 285

         ggc ggt ctg gtc aat agc cag cac cgt gat cgg gcg gtc act ttt gtc       1008
         Gly Gly Leu Val Asn Ser Gln His Arg Asp Arg Ala Val Thr Phe Val
         290                 295                 300                 305
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        gat aac cac gat acc agc cgg gcc ggc aac cct tat ggc atg ccg cag    1056
        Asp Asn His Asp Thr Ser Arg Ala Gly Asn Pro Tyr Gly Met Pro Gln
                        310             315             320
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        gtg atc aac tac aag aac cag gcc tac gct tac att ctg ttg cgt gag    1104
        Val Ile Asn Tyr Lys Asn Gln Ala Tyr Ala Tyr Ile Leu Leu Arg Glu
                        325             330             335

10      cat ggg gtg ccg act gtg ttt gcc cgc gat tac gac gaa ttt ggc atg    1152
        His Gly Val Pro Thr Val Phe Ala Arg Asp Tyr Asp Glu Phe Gly Met
                        340             345             350

        gcg cca acg ctg gat aaa ttg att gag gcg cgc cgc tac ttt gct tat    1200
15      Ala Pro Thr Leu Asp Lys Leu Ile Glu Ala Arg Arg Tyr Phe Ala Tyr
                        355             360             365

        ggt cct ggc cat gag tac tcc ggc aat acc gag gcc gtc tac gcc tat    1248
        Gly Pro Gly His Glu Tyr Ser Gly Asn Thr Glu Ala Val Tyr Ala Tyr
20      370             375             380             385

        gtg cgc gaa ggg ctt agc act gtg ccg ggt acc ggt ctg gtg atg ctg    1296
        Val Arg Glu Gly Leu Ser Thr Val Pro Gly Thr Gly Leu Val Met Leu
                        390             395             400
25

        ata tcg ggt cga aac tgg ggt ggt cag cag tcg ttc acc atc aac agc    1344
        Ile Ser Gly Arg Asn Trp Gly Gly Gln Gln Ser Phe Thr Ile Asn Ser
                        405             410             415

30      cac cag ccg aat acc acc ttt tac gat tat acc ggc aat gtt agc ggc    1392
        His Gln Pro Asn Thr Thr Phe Tyr Asp Tyr Thr Gly Asn Val Ser Gly
                        420             425             430

        acg gtg acc acc aat gcg cag ggc tat ggc agc ttc ccg gtc act atg    1440
35      Thr Val Thr Thr Asn Ala Gln Gly Tyr Gly Ser Phe Pro Val Thr Met
                        435             440             445

        acg gaa agt acc ggt tgg tca gtc tgg gta cca caa tcc aat ggt ggc    1488
        Thr Glu Ser Thr Gly Trp Ser Val Trp Val Pro Gln Ser Asn Gly Gly
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                        450              455              460              465


        act cag ccg gga tcc att acc ctg cgg atg acc aag gat gtt ggc tat    1536
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5                       470              475              480


        ggc ttt tcg ttg ttc ttc acc ggc agc agt gcg gaa ctg acc aac tgg    1584
        Gly Phe Ser Leu Phe Phe Thr Gly Ser Ser Ala Glu Leu Thr Asn Trp
                        485              490              495
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        ggc ggc ggt att gaa ggc acc tgg aca tcc ggt aat gtc tgg gaa gtg    1632
        Gly Gly Gly Ile Glu Gly Thr Trp Thr Ser Gly Asn Val Trp Glu Val
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15      acc atc ccg gat cc                                                 1646
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        -15              -10              -5                       1

        Glu Leu Pro Gln Ile Pro Pro Gln Gln Val Asn Asn Thr Met Tyr Gln
35                       5                10               15

        Ala Phe Tyr Trp Asp Ala Tyr Pro Gly Leu Trp Ala Asn Leu Pro Ala
                        20               25               30

        Met Ala Ala Pro Leu Ala Glu Arg Gly Ile Thr Ser Met Trp Leu Pro
                35               40               45
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Pro Ala Ala Lys Gly Met Asn Gly Thr Phe Ser Val Gly Tyr Asp Val
50                  55              60                  65
Tyr Asp Phe Trp Asp Leu Gly Glu Phe Asn Gln Lys Gly Thr Thr Ala
                70              75                  80
Thr Arg Tyr Gly Thr Arg Gln Gln Leu Gln Gln Ala Leu Ser Ala Leu
            85              90                  95
Asp Gln Leu Gly Ile Gln Ala Tyr Phe Asp Val Val Phe Asn His Arg
            100             105                 110
Met Gly Ala Asp Ala Gln Glu Asn Ile Pro Gly Phe Gly Leu Ala Trp
        115                 120                 125
Thr Glu Tyr His Leu Gln Gly Arg Gln Ala His Tyr Thr Gln Gln Asn
130             135                 140                 145
Trp Gly Tyr Leu Trp His Asp Phe Asp Trp Asn Trp Thr Ala Phe Asn
            150                 155                 160
Gly Ser Asp Asn Gln Leu Tyr Pro Gly Lys Trp Trp Gly Asn Thr Phe
            165                 170                 175
His Phe Pro Tyr Leu Met Gly Glu Asp Val Asp Tyr Asn Arg Phe Glu
            180                 185                 190
Val Gln Gln Glu Met Lys Ala Trp Gly Glu Trp Ile Ile Asn Ser Val
            195                 200                 205
Gly Phe Ser Gly Phe Arg Met Asp Ala Ile Ala His Val Asp Thr Asp
210                 215                 220                 225
Phe Thr Arg Asp Trp Ile Asn His Val Gln Trp Ala Thr Ser Glu Asp
            230                 235                 240
Val Phe Phe Val Ala Glu Ala Trp Val Ser Asp Ile Asn Gly Tyr Leu
            245                 250                 255
Asp Ala Val Asn Thr Pro His Leu Arg Ala Phe Asp Phe Asn Leu Arg
            260                 265                 270
Glu Asp Phe Val Ala Leu Ser Ser Gly Ser Lys Asp Met Arg Trp Trp
        275                 280                 285
Gly Gly Leu Val Asn Ser Gln His Arg Asp Arg Ala Val Thr Phe Val
290             295                 300                 305
Asp Asn His Asp Thr Ser Arg Ala Gly Asn Pro Tyr Gly Met Pro Gln
            310                 315                 320
Val Ile Asn Tyr Lys Asn Gln Ala Tyr Ala Tyr Ile Leu Leu Arg Glu
            325                 330                 335
His Gly Val Pro Thr Val Phe Ala Arg Asp Tyr Asp Glu Phe Gly Met
            340                 345                 350
Ala Pro Thr Leu Asp Lys Leu Ile Glu Ala Arg Arg Tyr Phe Ala Tyr
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                355                    360                    365
        Gly Pro Gly His Glu Tyr Ser Gly Asn Thr Glu Ala Val Tyr Ala Tyr
        370                    375                    380                 385
        Val Arg Glu Gly Leu Ser Thr Val Pro Gly Thr Gly Leu Val Met Leu
                               390                    395                 400
        Ile Ser Gly Arg Asn Trp Gly Gly Gln Gln Ser Phe Thr Ile Asn Ser
                          405                    410                    415
        His Gln Pro Asn Thr Thr Phe Tyr Asp Tyr Thr Gly Asn Val Ser Gly
                          420                    425                    430
        Thr Val Thr Thr Asn Ala Gln Gly Tyr Gly Ser Phe Pro Val Thr Met
                     435                    440                    445
        Thr Glu Ser Thr Gly Trp Ser Val Trp Val Pro Gln Ser Asn Gly Gly
        450                    455                    460                 465
        Thr Gln Pro Gly Ser Ile Thr Leu Arg Met Thr Lys Asp Val Gly Tyr
                               470                    475                 480
        Gly Phe Ser Leu Phe Phe Thr Gly Ser Ser Ala Glu Leu Thr Asn Trp
                          485                    490                    495
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        Thr Ile Pro Asp
        515


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                -30                 -25                 -20
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            gcc att gcc tta tcc gct ctc agt tta tcc ttt ggc ctg cag gcc agc    96
 5          Ala Ile Ala Leu Ser Ala Leu Ser Leu Ser Phe Gly Leu Gln Ala Ser
                -15                 -10                 -5                  1
```

```
            gag tta cca caa att cca cca cag cag gtg aac aac acc atg tac cag    144
10          Glu Leu Pro Gln Ile Pro Pro Gln Gln Val Asn Asn Thr Met Tyr Gln
                            5                   10                  15
```

```
            gca ttt tat tgg gat gcc tac cct ggc ctt tgg gcc aat tta ccg gcc    192
            Ala Phe Tyr Trp Asp Ala Tyr Pro Gly Leu Trp Ala Asn Leu Pro Ala
                        20                  25                  30
15
            atg gcg gcc cct ttg gcc gag cgt ggc att acc tcg atg tgg ttg ccg    240
            Met Ala Ala Pro Leu Ala Glu Arg Gly Ile Thr Ser Met Trp Leu Pro
                    35                  40                  45
```

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20          ccc gcc gcc aaa ggc atg aat ggt act ttc agt gtc ggt tac gat gta    288
            Pro Ala Ala Lys Gly Met Asn Gly Thr Phe Ser Val Gly Tyr Asp Val
                50                  55                  60                  65
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```
            tac gat ttc tgg gat ctg ggc gag ttt aac caa aaa ggc acc acc gcc    336
25          Tyr Asp Phe Trp Asp Leu Gly Glu Phe Asn Gln Lys Gly Thr Thr Ala
                            70                  75                  80
```

```
            acc cgt tac ggt act cgt cag cag ctg caa caa gca ctg agt gct ctg    384
            Thr Arg Tyr Gly Thr Arg Gln Gln Leu Gln Gln Ala Leu Ser Ala Leu
30                      85                  90                  95
```

```
            gac caa ctg ggt att cag gcc tat ttt gat gtg gtg ttt aac cac cgc    432
            Asp Gln Leu Gly Ile Gln Ala Tyr Phe Asp Val Val Phe Asn His Arg
                        100                 105                 110
35
            atg ggc gcc gat gca cag gag aat att cct ggc ttt ggc ctg gcc tgg    480
            Met Gly Ala Asp Ala Gln Glu Asn Ile Pro Gly Phe Gly Leu Ala Trp
                115                 120                 125
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          acc gag tat cat ctg caa ggt cgt cag gcg cat tat acc cag caa aac    528
          Thr Glu Tyr His Leu Gln Gly Arg Gln Ala His Tyr Thr Gln Gln Asn
          130                 135                 140                 145

 5        tgg ggc tac ttg tgg cac gac ttt gac tgg aac tgg acc gcg ttt aat    576
          Trp Gly Tyr Leu Trp His Asp Phe Asp Trp Asn Trp Thr Ala Phe Asn
                          150                 155                 160

          ggc tcc gac aat cag ctc tac ccc ggc aaa tgg tgg ggc aat acc ttc    624
10        Gly Ser Asp Asn Gln Leu Tyr Pro Gly Lys Trp Trp Gly Asn Thr Phe
                              165                 170                 175

          cac ttc cct tat ttg atg ggt gag gat gtc gat tac aac cgc ttt gaa    672
          His Phe Pro Tyr Leu Met Gly Glu Asp Val Asp Tyr Asn Arg Phe Glu
15                            180                 185                 190

          gtg cag cag gaa atg aaa gcc tgg ggc gag tgg atc atc aac agc gtt    720
          Val Gln Gln Glu Met Lys Ala Trp Gly Glu Trp Ile Ile Asn Ser Val
                              195                 200                 205
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          ggc ttt agc ggc ttt cgg atg gat gcc atc gcc cat gtc gat acc gat    768
          Gly Phe Ser Gly Phe Arg Met Asp Ala Ile Ala His Val Asp Thr Asp
          210                 215                 220                 225

25        ttt acc cgt gac tgg atc aat cac gtg cag tgg gcc acc agt gag gat    816
          Phe Thr Arg Asp Trp Ile Asn His Val Gln Trp Ala Thr Ser Glu Asp
                              230                 235                 240

          gtg ttc ttt gtc gct gaa gcc tgg gtc agt gat atc aac ggc tat ctg    864
30        Val Phe Phe Val Ala Glu Ala Trp Val Ser Asp Ile Asn Gly Tyr Leu
                              245                 250                 255

          gat gca gtc aat acg ccg cat ttg cgc gct ttt gat ttc aat ttg cgc    912
          Asp Ala Val Asn Thr Pro His Leu Arg Ala Phe Asp Phe Asn Leu Arg
35                            260                 265                 270

          gaa gac ttc gtt gct tta agc agc ggt agc aaa gac atg cgt tgg tgg    960
          Glu Asp Phe Val Ala Leu Ser Ser Gly Ser Lys Asp Met Arg Trp Trp
                          275                 280                 285
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ggc ggt ctg gtc aat agc cag cac cgt gat cgg gcg gtc act ttt gtc   1008
Gly Gly Leu Val Asn Ser Gln His Arg Asp Arg Ala Val Thr Phe Val
290   295   300   305

gat aac cac gat acc agc cgg gcc ggc aac cct tat ggc atg ccg cag   1056
Asp Asn His Asp Thr Ser Arg Ala Gly Asn Pro Tyr Gly Met Pro Gln
                    310   315   320

gtg atc aac tac aag aac cag gcc tac gct tac att ctg ttg cgt gag   1104
Val Ile Asn Tyr Lys Asn Gln Ala Tyr Ala Tyr Ile Leu Leu Arg Glu
                325   330   335

cat ggg gtg ccg act gtg ttt gcc cgc gat tac gac gaa ttt ggc atg   1152
His Gly Val Pro Thr Val Phe Ala Arg Asp Tyr Asp Glu Phe Gly Met
                340   345   350

gcg cca acg ctg gat aaa ttg att gag gcg cgc cgc tac ttt gct tat   1200
Ala Pro Thr Leu Asp Lys Leu Ile Glu Ala Arg Arg Tyr Phe Ala Tyr
                355   360   365

ggt cct ggc cat gag tac tcc ggc aat acc gag gcc gtc tac gcc tat   1248
Gly Pro Gly His Glu Tyr Ser Gly Asn Thr Glu Ala Val Tyr Ala Tyr
370   375   380   385

gtg cgc gaa ggg ctt agc act gtg ccg ggt acc ggt ctg gtg atg ctg   1296
Val Arg Glu Gly Leu Ser Thr Val Pro Gly Thr Gly Leu Val Met Leu
                390   395   400

ata tcg ggt cga aac tgg ggt ggt cag cag tcg ttc acc atc aac agc   1344
Ile Ser Gly Arg Asn Trp Gly Gly Gln Gln Ser Phe Thr Ile Asn Ser
                405   410   415

cac cag ccg aat acc acc ttt tac gat tat acc ggc aat gtt agc ggc   1392
His Gln Pro Asn Thr Thr Phe Tyr Asp Tyr Thr Gly Asn Val Ser Gly
                420   425   430

acg gtg acc acc aat gcg cag ggc tat ggc agc ttc ccg gtc act atg   1440
Thr Val Thr Thr Asn Ala Gln Gly Tyr Gly Ser Phe Pro Val Thr Met

435 440 445

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      acg gaa agt acc ggt tgg tca gtc tgg gta cca caa tcc aat ggt ggc    1488
      Thr Glu Ser Thr Gly Trp Ser Val Trp Val Pro Gln Ser Asn Gly Gly
5     450               455               460               465


      act cag ccg gga tcc att acc ctg cgg atg acc aag gat gtt ggc tat    1536
      Thr Gln Pro Gly Ser Ile Thr Leu Arg Met Thr Lys Asp Val Gly Tyr
                        470               475               480
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      ggc ttt tcg ttg ttc ttc acc ggc agc agt gcg gaa ctg acc aac tgg    1584
      Gly Phe Ser Leu Phe Phe Thr Gly Ser Ser Ala Glu Leu Thr Asn Trp
                    485               490               495

15    ggc ggc ggt att gaa ggc acc tgg aca tcc ggt aat gtc tgg gaa gtg    1632
      Gly Gly Gly Ile Glu Gly Thr Trp Thr Ser Gly Asn Val Trp Glu Val
                500               505               510


      acc atc ccg gat ccg ggc aac ttt gaa tgg aaa acc cgt aaa ggc cca    1680
20    Thr Ile Pro Asp Pro Gly Asn Phe Glu Trp Lys Thr Arg Lys Gly Pro
            515               520               525


      acc ggt ggc agt ggt cag gac tgg gaa agt ggc agc aac cac aat cag    1728
      Thr Gly Gly Ser Gly Gln Asp Trp Glu Ser Gly Ser Asn His Asn Gln
25    530               535               540               545


      acc aat ttg cac ccc agt ttt aat ggt ggg ttt taa                    1764
      Thr Asn Leu His Pro Ser Phe Asn Gly Gly Phe  *
                        550               555
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35        <213> Bacillus sp.


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Ala Ile Ala Leu Ser Ala Leu Ser Leu Ser Phe Gly Leu Gln Ala Ser
-15             -10                 -5                          1

Glu Leu Pro Gln Ile Pro Pro Gln Gln Val Asn Asn Thr Met Tyr Gln
            5                 10                  15

Ala Phe Tyr Trp Asp Ala Tyr Pro Gly Leu Trp Ala Asn Leu Pro Ala
            20                25                  30

Met Ala Ala Pro Leu Ala Glu Arg Gly Ile Thr Ser Met Trp Leu Pro
    35                  40                  45

Pro Ala Ala Lys Gly Met Asn Gly Thr Phe Ser Val Gly Tyr Asp Val
50                  55                  60                  65

Tyr Asp Phe Trp Asp Leu Gly Glu Phe Asn Gln Lys Gly Thr Thr Ala
                70                75                  80

Thr Arg Tyr Gly Thr Arg Gln Gln Leu Gln Gln Ala Leu Ser Ala Leu
            85                90                  95

Asp Gln Leu Gly Ile Gln Ala Tyr Phe Asp Val Val Phe Asn His Arg
            100               105                 110

Met Gly Ala Asp Ala Gln Glu Asn Ile Pro Gly Phe Gly Leu Ala Trp
    115                 120                 125

Thr Glu Tyr His Leu Gln Gly Arg Gln Ala His Tyr Thr Gln Gln Asn
130                 135                 140                 145

Trp Gly Tyr Leu Trp His Asp Phe Asp Trp Asn Trp Thr Ala Phe Asn
                150               155                 160

Gly Ser Asp Asn Gln Leu Tyr Pro Gly Lys Trp Trp Gly Asn Thr Phe
                165               170                 175

His Phe Pro Tyr Leu Met Gly Glu Asp Val Asp Tyr Asn Arg Phe Glu
                180               185                 190

Val Gln Gln Glu Met Lys Ala Trp Gly Glu Trp Ile Ile Asn Ser Val
    195                 200                 205

Gly Phe Ser Gly Phe Arg Met Asp Ala Ile Ala His Val Asp Thr Asp
210                 215                 220                 225

Phe Thr Arg Asp Trp Ile Asn His Val Gln Trp Ala Thr Ser Glu Asp
                230               235                 240

Val Phe Phe Val Ala Glu Ala Trp Val Ser Asp Ile Asn Gly Tyr Leu
                245               250                 255

Asp Ala Val Asn Thr Pro His Leu Arg Ala Phe Asp Phe Asn Leu Arg
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                        260                    265                    270
        Glu Asp Phe Val Ala Leu Ser Ser Gly Ser Lys Asp Met Arg Trp Trp
            275                    280                    285
        Gly Gly Leu Val Asn Ser Gln His Arg Asp Arg Ala Val Thr Phe Val
  5     290                    295                    300                    305
        Asp Asn His Asp Thr Ser Arg Ala Gly Asn Pro Tyr Gly Met Pro Gln
                            310                    315                    320
        Val Ile Asn Tyr Lys Asn Gln Ala Tyr Ala Tyr Ile Leu Leu Arg Glu
                        325                    330                    335
 10     His Gly Val Pro Thr Val Phe Ala Arg Asp Tyr Asp Glu Phe Gly Met
                    340                    345                    350
        Ala Pro Thr Leu Asp Lys Leu Ile Glu Ala Arg Arg Tyr Phe Ala Tyr
            355                    360                    365
        Gly Pro Gly His Glu Tyr Ser Gly Asn Thr Glu Ala Val Tyr Ala Tyr
 15     370                    375                    380                    385
        Val Arg Glu Gly Leu Ser Thr Val Pro Gly Thr Gly Leu Val Met Leu
                        390                    395                    400
        Ile Ser Gly Arg Asn Trp Gly Gly Gln Gln Ser Phe Thr Ile Asn Ser
                    405                    410                    415
 20     His Gln Pro Asn Thr Thr Phe Tyr Asp Tyr Thr Gly Asn Val Ser Gly
                    420                    425                    430
        Thr Val Thr Thr Asn Ala Gln Gly Tyr Gly Ser Phe Pro Val Thr Met
            435                    440                    445
        Thr Glu Ser Thr Gly Trp Ser Val Trp Val Pro Gln Ser Asn Gly Gly
 25     450                    455                    460                    465
        Thr Gln Pro Gly Ser Ile Thr Leu Arg Met Thr Lys Asp Val Gly Tyr
                        470                    475                    480
        Gly Phe Ser Leu Phe Phe Thr Gly Ser Ser Ala Glu Leu Thr Asn Trp
                        485                    490                    495
 30     Gly Gly Gly Ile Glu Gly Thr Trp Thr Ser Gly Asn Val Trp Glu Val
                        500                    505                    510
        Thr Ile Pro Asp Pro Gly Asn Phe Glu Trp Lys Thr Arg Lys Gly Pro
                515                    520                    525
        Thr Gly Gly Ser Gly Gln Asp Trp Glu Ser Gly Ser Asn His Asn Gln
 35     530                    535                    540                    545
        Thr Asn Leu His Pro Ser Phe Asn Gly Gly Phe
                    550                    555
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